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“SOME OF THE FOULEST
JOKES I'VE EVER HEARD
CAME FROM **MY MOTHER.**”

—SETH MACFARLANE

THIS
\$2 BILLION
COMIC
GENIUS
IS NO
JOKE

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Ad World, and Inside
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By Josh Dean

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ATTACK OF THE GREEN-TECH GEEKS

Jetsons-style apps that measure just what we're consuming are the hottest trend in sustainable business. Can the energy savings trump the privacy hit?

By Anya Kamenetz

REWARDING TRASH
RecycleBank's Ron Gonen has big plans.

"I HAD THIS IDEA that there were going to be these recycling carts all over the country with chips embedded in them," says Ron Gonen, CEO and cofounder of RecycleBank and a former Deloitte consultant. "Trucks owned by cities or haulers would have a mechanical arm that would go out and grab these carts, weigh them, and transmit that info wirelessly to my server. We would run an algorithm to convert the volume into points,

and people would come to my Web site, and then I would have all these businesses accept those points. Nobody ever pulled me aside and said, 'Are you out of your freaking mind?'"

Gonen isn't crazy. In fact, he is one of a vanguard of green-tech geeks—at both startups and established companies such as IBM—who have developed sophisticated sensors and software systems to let individuals and companies measure and manage gas, electricity, and water usage; power-grid surges; traffic congestion; pollutants in rivers and other bodies of water; the effects of green roofs and solar panels; and,

of course, the impact of increased recycling. These technologies aggregate the data they gather in easy-to-view interfaces, displaying relevant feedback in charts on a BlackBerry or in a 3-D virtual world.

The guiding principle behind these advancements is that "with better information, people will make better decisions," says Collin Breakstone, VP of business development for Agilewaves, a startup by three former NASA scientists who set out to give homeowners the same view into their energy use that Wal-Mart has of its supply chain. Research backs him up:

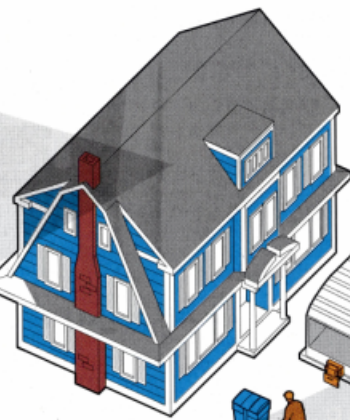
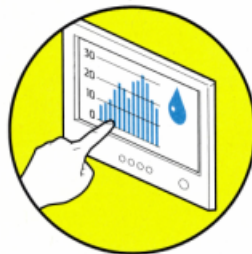
Thirty years of studies about home energy show that simply seeing the impact of your behavior in real time cuts consumption by 5% to 15%.

Although a product such as Agilewaves' Resource Monitor can be installed in a home or small office for as little as \$7,900, cities and large government agencies are the ideal customers for this basket of related technologies. Agilewaves hopes to market its product to municipalities, which need accurate predictions of energy use. IBM is introducing a Smart Planet label to link ongoing initiatives including a traffic-congestion-

Power House

Advanced sensors and incentives can trim electricity, water, and gas use at home and boost recycling.

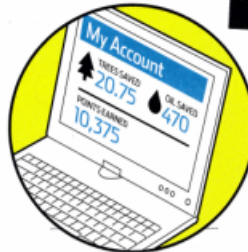
Go With the Flow A showerhead-flow sensor can provide direct feedback on your water and energy use, spurring a shorter shower. A system such as IBM's pilot project in Washington State lets a utility charge you more for hot water during peak times.



Touch That Dial Agilewaves' Resource Monitor has a touch-screen interface that is similar to a very fancy thermostat. Homeowners install a network of sensors to track usage down to individual pipes and electrical outlets; the sensors are integrated into a data system that lets you monitor usage in real time.



The Tell-Tale Arm RecycleBank outfits each home in a partner city with a special recycling bin that has a radio-frequency-identification (RFID) tag embedded in it. On trash day, a robot arm on the garbage truck weighs how much material is recycled, and then an onboard computer relays that info wirelessly to RecycleBank headquarters.



One Person's Trash Customers log on to recyclebank.com to see how much they recycled, how many reward points their refuse is worth, and how their carbon footprint is affected. Some towns using RecycleBank have more than doubled their recycling rates by weight—diverting waste from landfills and conserving tons of valuable raw materials.

pricing system in Stockholm; a demand-based electricity-pricing scheme in the Pacific Northwest; and several water-management projects that will employ sensors and visualization tools in locations as diverse as New York's Hudson River and China's Yangtze. RecycleBank's Gonen has already wooed more than 70 cities and towns to use his service, with Dallas expected to come online this winter. Cities pay to put trash in landfills; RecycleBank diverts part of the waste and then shares in the savings.

RecycleBank's second revenue stream—the targeted marketing data

it collects along with customers' milk cartons—signals the potentially controversial nature of smart technologies as they roll out to a wider audience. "As soon as you log in, we know things about you which almost no other Web site knows," Gonen says. "We know where you live, we know your email address, we know each week you've been home; we know how much you like to buy because we know how much you're recycling." There's a fine line between sensing and surveillance, especially when the government is the one screening the numbers, as New York mayor Michael

Bloomberg discovered when his proposed congestion-pricing plan failed due in part to privacy fears.

For green-tech geeks, though, a nudge from Big Brother is unavoidable if these technologies are to radically improve the management of scarce resources. "A lot of the response to climate change depends on changing behaviors," says Colin Harrison, IBM's director of corporate strategy of earth, water, fire, and wind. "This is one of the most powerful levers we have to pull on." ■